IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Egner et al.	Docket No.:	CER-001
Serial No.:	10/585,011	Art Unit:	3695
Filed:	June 29, 2006	Examiner:	Baird, Edward J.
For:	System and Method for Analyzing Strategic Network Investments in Wireless Networks		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Declaration of Dr. Charles Bernardin filed under 37 C.F.R. § 1.132

I, Dr. Charles Bernardin, do hereby declare that:

1. I am currently a Senior Lecturer with the Telecommunications Program in the Department of Electrical Engineering, University of Texas at Dallas from 2002 to 2011, where I have taught "Introduction to Wireless Communications" (EE4365) eight times. I was a Manager for Wireless RF engineering and a Senior Manager for Broadband Wireless product development at Nortel Networks at Richardson, Texas.

2. As a wireless RF engineer at Nortel Networks I gained practical experience working on wireless communication technologies such as AMPS, TDMA, GSM, CDMA, UMTS, GPRS and Wireless Sensor Networks.

3. I received my doctorial degree in 1979 from The John Hopkins University in the field of Biomedical engineering. I am the author of two books concerning numerical computation for engineering and scientific applications. I hold seven patents in the area of Wireless RF Coverage Estimation for Cellular systems. I am also the author of

several research papers covering a broad range of technical areas which include image processing, radar, spectral estimation and wireless communications.

4. I have more than 30 years of combined academic and industrial experience in the field of wireless communications.

5. Dr. Will Egner, one of the inventors of the present patent application, is a professional acquaintance and former co-worker of mine.

6. I have reviewed the specification and currently pending claims of the present patent application ("Egner"), and I have reviewed Adduci, Jr. et al., U.S. Patent No. 7,343,334 ("Adduci"). I would classify Adduci's patent as a Macroeconomic Information Technology approach that focuses on ROI at the Metropolitan/Rural Service Area (*i.e.*, it is a MSA/RSA level model) level.

7. Different from Adduci, Egner's solution focuses on the details of Wireless Network Topology. Egner's solution is at a much lower engineering infrastructure level than Adduci's high level IT model and cannot be simply deduced from Adduci by someone skilled in the art of wireless network planning. Egner claims evaluating return on equipment investment for individual wireless sectors in a cellular network based on a service quality metric per sector (*e.g.*, dropped call rate per sector), and then selecting one of the sectors for equipment investment based on the investment return per sector results. Egner claims that the investment return per sector also may be based on profit per sector, which may be determined from subscriber profit proxy and minutes of use per subscriber per sector. As such, I believe that Egner's claimed solutions are extremely useful to wireless service providers.

8. Adduci discloses evaluating the return on investment of enhanced wireless services (*e.g.*, Universal Mobile Telecommunications System ("UMTS")) in a geographic region (*i.e.*, a country or portion thereof, such as a city or metropolitan area, as stated in the first two full sentences of column 6 in Adduci) based on the revenue generated by the services and cost associated with the services, and then determining whether to deploy the services in the geographic region (*i.e.*, an MSA or RSA).

9. A first and primary difference between Egner and Adduci is that Adduci is directed to investment for an entire geographic region of a cellular network, while Egner is directed to investment for an individual sector in a cellular network. The term "sector" in a cellular network has a known meaning to those of ordinary skill in the art in the field of wireless telecommunications. A sector in a cellular network is known as the physical area covered by a directional antenna at a base station site (note that there may be other directional antennas covering the same area, such as when there are separate antennas for transmit, receive and control). For example, Egner shows fifteen sectors C101-C115 in Figure 1, and fifteen sectors C201-C215 in Figure 2, with each sector covering a 120^{o} area centered at its respective base station site location. A geographic region as disclosed by Adduci includes many such sectors so as to provide service coverage for the country, city, or metropolitan area (as stated in the first two full sentences of column 6 in Adduci). In my professional judgment, one of ordinary skill in the art would understand a sector of Egner to be physically much smaller than and functionally very different from the geographic region of Adduci.

10. A second primary difference between Egner and Adduci is that Adduci is directed to evaluating investment of wireless services for a broad geographic region, while Egner directed to evaluating capital investment in individual sectors. In the wireless telecommunications industry, when a particular service is deployed, it is deployed to all sectors in a geographic region, such as a country, city or metropolitan area. In my professional judgment, one of ordinary skill in the art would never deploy a service, such as UMTS, in one sector of a three-sector site without deploying it in the other two sectors of the site, let alone without deploying it in the rest of the sectors in the geographic region. In my professional judgment, Adduci does not provide any motivation to one of ordinary skill in the art to perform investment evaluation of either a service or capital equipment on a per sector basis in a cellular network.

11. A third primary difference between Egner and Adduci is that Adduci's investment evaluation is for a service in a geographic region, which is a business or macro-level evaluation, while Egner's investment evaluation is for capital equipment in individual sectors, which is an engineering or micro-level evaluation. Adduci would assist a wireless carrier's business and financial organizations in determining whether to deploy a new service, *e.g.*, UMTS, in a country, city or metropolitan area. Egner, on the other hand, would assist a network engineering organization in determining which sector to add capital investment, *e.g.*, radios and the like. In my professional judgment, Adduci does not provide any motivation to one of ordinary skill in the art for performing an engineering or micro-level evaluation, such as capital investment on a per sector basis.

I hereby declare that all statements made herein of my own knowledge are true and the all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishably by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

3-28-2011
Date

Dr. Charles P. Bernardin